Comprehensive Nutrient Management Plans – Training Opportunities

Course Title	Course Description	Intended Audience	Prerequisites	For More Information
Agricultural Waste Liner Workshop	One day overview of considerations that go into the successful selection and installation of waste storage linings.	Individuals involved in planning and design of agricultural waste storage systems.	None	Contact: Don V. Holley NRCS, National Employee Development Center Employee Development Specialist (817) 509-3267 dholley@ftw.nrcs.usda.gov
Agricultural Waste Management Systems – Primer (Self-paced; Workbook, CD-Rom, video or other media)	Overview of agricultural waste management systems. The course covers background, safety and hazards, planning, and functions of agricultural waste management systems.	Federal, State, or district employees, tribal representatives and others who are or will be providing technical assistance to plan and design agricultural waste management systems; or those who supervise employees with such responsibilities.	None	http://www.nedc.nrcs.usda.gov/courses/courses/ag_waste_primer.htm To enroll and request training materials: http://wrev.nrcs.usda.gov/nrcs/nedc/data/ag_wst_prmr_req_mat.asp
Agricultural Waste Management Systems II (Self-paced; Workbook, CD-Rom, video or other media)	Planning and designing agricultural waste management systems with an emphasis on systems for livestock and poultry operations. The course provides guidance in developing an agricultural waste management system that manages waste from production through use.	Federal, State, or district employees, tribal representatives and others who are or will be providing technical assistance to plan and design agricultural waste management systems.	Agricultural Waste Management Systems – Primer Working knowledge related to poultry and livestock production Introduction to Water Quality Nutrient and Pest Management	http://www.nedc.nrcs.usda.gov/courses/courses/agricultural_waste_mgt_systems_level_2.htm To enroll: http://www.ftw.nrcs.usda.gov/iris/ag_waste/wq.html

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			Considerations in Conservation Planning is recommended.	
Conservation Planning (Classroom, Web-based)	Basic conservation planning. Nine modules focusing on assistance to clients in developing comprehensive conservation plans considering all resource concerns. The course utilizes Internet, CDs, and hands on field application.	NRCS and Conservation Partnership Employees	One year of conservation planning experience	http://www.nedc.nrcs.usda.gov/courses/courses/conservation_planning.htm Access the Web portion (Modules 1-5): http://www.nedc.nrcs.usda.gov/courses/courses/consplanning/start.htm Contact NRCS State Office for Modules 6-9: http://www.nrcs.usda.gov/about/directory/specialists.html#StateOff Instructor notebooks available at: http://www.info.usda.gov/nrcs/cod
Introduction to Water Quality (Self-paced; Workbook, CD-Rom, video or other media)	This training program creates an awareness of NRCS Water Quality policy, and teaches principles and how to apply them in daily NRCS activities at the field, farm, and watershed scales. The course utilizes video and student workbook for the self-study delivery.	Federal, state, and district employees, tribal representatives, and those involved in non-point pollution abatement/mitigation or control activities to achieve water quality	None	http://www.nedc.nrcs.usda.gov/courses/courses/introduction_to_water_quality.htm To enroll: https://www.ftw.nrcs.usda.gov/iris/water_qual/wq.html
Liner Design for Animal Waste Containment (Classroom)	Planning, investigation, design and installation of animal waste containment systems such as compacted clay liners, treated compacted soil liners, and flexible geosynthetic membrane liners. The	Geologists, engineers, soil conservation technicians, and engineering	Soil Mechanics: Modules 1,2,3 – Classification of Soils-Level 1	http://www.nedc.nrcs.usda.gov/courses/courses/liner_design_for_animal_waste_containment.htm To enroll contact:

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	introductory topic concentrates on the evaluation of site characteristics that lead to the selection of an appropriate liner system. Appendix 10D, Chapter 10, Agricultural Waste Management Field Handbook, is the key reference. Lecture, discussion, and class problems are used to present the course.	technicians	Module 4 - Volume Weight Relationships Module 5 - Compaction	Georgia A. Spiller Employee Development Specialist (817) 509-3254 gspiller@ftw.nrcs.usda.gov Don V. Holley Employee Development Specialist (817) 509-3267 dholley@ftw.nrcs.usda.gov
Livestock & Poultry Environmental Stewardship (LPES)	A national curriculum and supporting educational tools intended for U.S. livestock and poultry industry advisors, who will help producers acquire certification and/or achieve environmentally sustainable production systems. Producers will also benefit directly from the information and assessment tools that the curriculum provides.	Livestock producers (primary), advisors to livestock industry (private and public sector), agricultural educators, and regulatory agency personnel	Knowledge of livestock production	http://www.lpes.org/les_plans.htmlhttp://www.lpes.org/les_plans.html University of Nebraska-Lincoln Institute of Agriculture and Natural Resources, Biological Systems Engineering, L.W. Chase Hall P.O. Box 830771 Lincoln, NE 68583-0771 (402) 472-2824
Nutrient and Pest Management Considerations in Conservation Planning (Self-paced – Workbook, CD-Rom, video or other media; Classroom)	This training course provides the student with a basic understanding of the science of nutrient and pest management, as well as environmental concerns associated with the use of nutrients and pest management measures, including environmental risk, and the processes that affect the fate and transport of nutrients and pesticides in the environment. Also covered are climate and water management planning considerations and their practical aspects as they relate to nutrient and pest management.	NRCS staff, certified crop advisors, crop consultants, and industry representatives that are, or will be, developing nutrient and pest management components of the over-all conservation plan.	Introduction to Water Quality	http://www.nedc.nrcs.usda.gov/courses/courses/nutrient_and_pest_management_considerations.htm To enroll: http://www.ftw.nrcs.usda.gov/iris/nutrient_pest/menu.html
Nutrient Management	Part of the CORE-4 suite of training on compact disk. The purpose of the workbook is to enhance the technical knowledge of and ability to effectively use conservation tillage, nutrient management, pest management,	NRCS field personnel	None	Contact NRCS State Office http://www.nrcs.usda.gov/about/directory/specialists.html#StateOff Training guide available at:

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	and conservation buffers to reduce potential nonpoint sources of pollution from cropland as well as provide opportunities for many other conservation benefits when applied as a system.			http://www.nrcs.usda.gov/technical/ECS/agronomy/core4.pdf
On-Farm Assessment and Environmental Review Certification Training	On-farm assessment and environmental review of livestock producers.	Livestock producers	Knowledge of livestock production	America's Clean Water Foundation http://www.acwf.org/projects/projects.htm To request an OFAER Assessment, Contact ACWF by e-mail (c.savage@acwf.org) or call (202) 898-0908 Information on assessor training: http://www.acwf.org/education/education.htm
Selected Nutrient Risk Assessment Tool (specific to each state)	State specific: assessing the risk of excess nutrient transfer off site.	Field personnel	None	Contact NRCS State Office http://www.nrcs.usda.gov/about/directory/specialists.html#StateOff
Soil Quality – Assessment and Applications for Field Staff (Classroom)	Provide field level personnel with an overall understanding of soil quality. Upon completion of the course, students will be able to recognize soil quality concerns, communicate those concerns to land managers and users, and provide alternatives to remedy those concerns in a manner that meets all requirements of the agency and the land manager and user.	NRCS and other agency employees who are involved in conservation planning with land managers and resource inventory and assessment activities	Basic knowledge of soils	http://www.nedc.nrcs.usda.gov/courses/courses/soil_quality_assessment_and_applications_for_field_staff.htm To enroll contact: Tony L. Lovell Employee Development Specialist (817) 509-3248 tlovell@ftw.nrcs.usda.gov Don V. Holley Employee Development Specialist (817) 509-3267

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				dholley@ftw.nrcs.usda.gov
Water Quality Monitoring (Self-paced; Workbook, CD-Rom, video or other media)	How to design a water quality monitoring system based on a stated water quality problem using a 12-step process and critically review a water quality monitoring system designed by others. Focuses primarily on chemical monitoring to evaluate the effectiveness of conservation practices.	Field personnel who are directly involved in a monitoring project and for other personnel who are responsible for providing technical assistance	Introduction to Water Quality A statistics course is desired but not required.	http://www.nedc.nrcs.usda.gov/courses/courses/water_quality_monitoring.htm To enroll: https://www.ftw.nrcs.usda.gov/iris/wq_mon/wq.html
Water Quality Resource Assessment (Classroom)	This course provides training in basic water quality processes, pollutants, and effects; stream dynamics; and the ecology of streams and lakes. It also focuses on assessment approaches including the following NRCS guidance: Stream Visual Assessment Protocol; A Procedure to Estimate the Response of Aquatic Systems to Changes in P and N Inputs; and Water Quality Indicators Guide: Surface Water; benthic macroinvertebrates as water quality indicators and addressing water quality in the planning process.	Any employee in contact with landowners or others who needs an understanding of water quality issues	Basic knowledge of resource planning Introduction to Water Quality	http://www.nedc.nrcs.usda.gov/courses/courses/water_quality_resource_assessment.htm To enroll contact: Georgia A. Spiller Employee Development Specialist (817) 509-3254 gspiller@ftw.nrcs.usda.gov Marcia Janik Training Technician (817) 509-3257 mjanik@ftw.nrcs.usda.gov
Comprehensive Nutrient Management Plan Development (Classroom)	This three-day course is designed to train consultants in the development of CNMPs. This course is used by the University of Tennessee Extension in Continuing Education Programming, and by NRCS Tennessee as a step in the Certification Process.	Individuals involved in developing and implementing CNMPs	No specific prerequisites but a working knowledge of animal waste systems and nutrient management is strongly recommended	Robert Burns University of Tennessee Biosystems Engineering & Environmental Science (865) 974-7266 http://wastemgmt.ag.utk.edu/2003cnmpcourse.htm

Selected Tools to Assist in CNMP Development

Tool	Description	For More Information
Manure Master	An on-farm manure balance tool that allows comparison of the nutrient content in the animal manure produced on a farm with the quantity of nutrients used and removed from the fields receiving manure applications.	http://www2.ftw.nrcs.usda.gov/ManureMaster/
Animal Waste Management Software (AWM)	A planning tool for animal feeding operations that can be used to estimate the production of manure, bedding, process water and determine the size of storage/treatment facilities. The procedures and calculations used in AWM are based on the NRCS Agricultural Waste Management Field Handbook.	http://www.wcc.nrcs.usda.gov/water/quality/common/wastemgmt/awm.html
Manure Management Planner (MMP)	A Windows-based computer program to create manure management plans for crop and animal feeding operations. The user enters information about the operation's fields, crops, storage, animals, and application equipment. MMP helps the user allocate manure (where, when and how much) on a monthly basis for the length of the plan (1-10 years) and determine acreage, manure storage capacity, and application equipment needs to manage the manure produced in an environmentally responsible manner.	http://www.agry.purdue.edu/mmp/
Spatial Nutrient Management Planner (SNMP)	A decision support tool that facilitates the collection, analysis and presentation of spatial information related to nutrient management planning. SNMP is linked to Purdue University's Manure Management Planner. Information from SNMP can be easily exported to Manure Management Planner (MMP) to create multi-year manure allocation plans.	http://www.cares.missouri.edu/snmp/
AFOWizard	This is a site-specific, compliance-oriented wizard application that helps field offices develop Nutrient Management plans for livestock and poultry operations. The AFOWizard connects ArcView® and an Excel® spreadsheet to make spatial and tabular land application calculations.	http://www.esri.sc.edu/Projects/usda/application_development/
Idaho One Plan	This is a multi-agency project that provides an integrated site for farmers and ranchers to use to develop conservation plans for their operations. The web site integrates all agency programs, government regulations and conservation planning aids; provides self-help guides to assist in determining whether and how certain programs or regulations apply to their farm or ranch operation; and identifies financial assistance opportunities.	http://www.oneplan.org/

Additional CNMP Related Information and Technical References

Title	Description	For More Information
CNMP Technical Guidance	Provides technical guidance for the development of CNMPs, whether for USDA's voluntary programs or as a means to help satisfy the U.S. Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) permit requirements. The Technical Guidance is to be used as a tool in support of the NRCS conservation planning process, and with NRCS Technical References, Handbooks, and Policy Directives.	http://www.nrcs.usda.gov/programs/afo
Agricultural Waste Management Field Handbook	Technical guidance for all aspects of planning, siting, design, and operation and maintenance of agricultural waste management systems.	http://www.ftw.nrcs.usda.gov/awmfh.html
National Handbook of Conservation Practice Standards	NRCS conservation practice standards provide guidance for applying conservation technology on the land and set the minimum level for acceptable application of the technology.	http://www.ftw.nrcs.usda.gov/nhcp_2.html
Electronic Field Office Technical Guides, by State	Each state determines which National conservation practice standards are applicable in their state. States add the technical detail needed to effectively use the standards at the Field Office level, and issue them as state conservation practice standards. State conservation practice standards are contained in Section IV of the Field Office Technical Guide.	http://www.nrcs.usda.gov/technical/efotg/
Minimizing Phosphorus Losses From Agriculture	Information on background, issues, and from the Southern Extension-Research Activity (SERA) of the Southern regional branch of the Cooperative State Research, Education, and Extension Service (CSREES).	http://www.soil.ncsu.edu/sera17/
Dairy Farmer Profitability Using Intensive Rotational Stocking	Results from the 1992 Pennsylvania State University study of the profitability of dairy farms practicing intensive rotational grazing. The 52 cooperating farmers were selected completely at random, with a *stratified random sample statistical design*, from among nearly 15 percent, or 350 farmers, practicing intensive grazing in a five-county region of northeastern Pennsylvania—Bradford, Tioga, Susquehanna, Wyoming, and Wayne Counties. The results from this study reflect	http://www.nrcs.usda.gov/technical/references/pdf/Dairy.pdf

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Title	Description	For More Information
	typical use of intensive rotational stocking.	
Soil Testing for Manure Management	University of Arkansas, Division of Agriculture, Cooperative Extension Service publication provides guidance on proper soil sampling and testing techniques. Proper sampling is critical to ensure results that accurately characterize the plant nutrient status of the soil being tested. Step-by-step recommendations for soil sampling pastures amended with animal manures are listed.	http://www.soil.ncsu.edu/sera17/publications/AR_Factsheet/fsa-1035.pdf
Agricultural Phosphorus and Eutrophication	Agricultural Research Service publication discussing the overall goal to reduce P losses from agriculture by balancing off-farm inputs of P in feed and fertilizer with outputs in products and to manage soils in ways that retain crop nutrient resources. Source and transport control strategies as the basis for increasing P-use efficiency in agricultural systems. (ARS–149, July 1999)	http://www.ars.usda.gov/is/np/Phos&Eutro/phos&eutro.pdf
A Procedure to Estimate the Response of Aquatic Systems to Changes in Phosphorus and Nitrogen Inputs	An NRCS publication providing a simple assessment procedure to estimate the responsiveness of a waterbody to changes in the supply (loading) of phosphorus (P) and nitrogen (N). Lakes, rivers, streams, and estuaries may be assessed with this procedure. Few data about the waterbody are required. The procedure consists of a dichotomous key that leads to classifying the waterbody in question according to key characteristics that influence the responsiveness of the waterbody to changes in nutrient loading.(October 1999)	http://www.soil.ncsu.edu/sera17/publications/AquaticSensitivity/aqusens.pdf
Soil Testing for Phosphorus: Environmental Uses and Implications	A SERA-IEG 17 publication on soil testing for phosphorus, current status and uses in nutrient management, improvements needed, and strategies for managing agricultural phosphorus for water quality protection. (Southern Cooperative Series Bulletin #389, April, 1998)	http://www.soil.ncsu.edu/sera17/publications/sera17-1/SCSB0398.pdf
Methods of Phosphorus Analysis for Soils, Sediments, Residuals, and Waters	A SERA-IEG 17 publication on methods of analysis for soil, water, and residual materials for environmentally relevant forms of P. The publication is intended solely to provide a set of uniform testing methods for environmental scientists working across an enormous range of soil and climatic conditions, to improve communication and understanding of this complex issue. (Southern Cooperative Series	http://www.soil.ncsu.edu/sera17/publications/sera17-2/p_methods2000.pdf

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	Bulletin #396, September, 2000)	